

REMARKS/ARGUMENTS

Claims 1-15 have been examined. Claims 1-3, 6, 8-10, 13, and 15 have been rejected. It is noted with appreciation that claims 4, 5, 7, 11, 12, and 14, although objected to, have been deemed to be directed toward allowable subject matter. The present response amends claims 1, 4, 7-8, 11, and 14-15. Claims 1-15 remain pending. Reconsideration and allowance of all pending claims are respectfully requested.

Claim Objections

Claims 1, 8, and 15 have been objected to. The Examiner has stated that the Applicant "is required to fully describe the OFDM." Although the basis for this objection is not fully understood, to expedite prosecution, claims 1, 8, and 15 have been amended to recite "orthogonal frequency division multiplexing" at the first mention of "OFDM." The objection is therefore overcome and withdrawal is respectfully requested.

Claim Rejections

Claims 1, 3, 6, 8, 10, 13, and 15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,618,352 issued to Shirakata, et al. in view of U.S. Patent No. 6,373,861 issued to Lee. It is respectfully submitted that these rejected claims, as amended, recite features neither disclosed nor suggested by the cited references. The rejection should accordingly be withdrawn.

Independent claims 1, 8, and 15 recite the reception of a series of time domain OFDM bursts and conversion of the time domain OFDM bursts into frequency domain OFDM bursts. The frequency domain OFDM bursts include selected symbols having known transmitted values. As amended, claims 1, 8, and 15, recite the determination of phase differences "between ones of said frequency domain OFDM bursts for said selected symbols" The coarse frequency offset is determined based on the phase differences.

Neither of the cited references discloses or suggest the determination of phase differences between frequency domain OFDM bursts derived in this manner. As the rejection notes, Shirakata indeed discloses phase differences between OFDM bursts. However, the phase differences in Shirakata are measured between a received frequency domain OFDM burst and known transmitted values. This is the function of the phase difference calculating unit 8d cited in the rejection. There is no disclosure or suggestion in Shirakata of measuring phase differences among frequency domain OFDM burst obtained from a received signal as required by the present independent claims. The Lee reference does not remedy this deficiency of Shirakata. This is sufficient reason for the allowability of claims 1, 8, and 15.

The rejection of claims 1, 8, and 15 is also unsupportable because there is no motivation to combine the Shirakata and Lee patents. The Shirakata patents defines a signal structure where certain OFDM subcarriers are given specified values to facilitate phase error measurements. The Lee patent discloses coarse frequency synchronization using entirely unrelated techniques. The coarse frequency synchronization technique of Lee is not relevant to the phase error measurements of Shirakata. The teachings of these references should not be cobbled together to form the invention recited by claims 1, 8, and 15.

Claims 3, 6, 10, and 13 are allowable for at least the reason of their dependence from claims 1, 8, and 15. Additionally, claims 3 and 10 recite the use of a supplemental cyclic prefix, a feature neither disclosed nor suggested by the art of record. At least claims 3 and 10 are thus allowable on their own merits.

Claims 2 and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shirakata in view of Lee, and further in view of U.S. Patent No. 5,732,113 issued to Schmidl, et al. Claims 2 and 9 are dependent from claims 1 and 8. The Schmidl patent does not remedy the deficiencies of Shirakata and Lee as they apply to the parent claims. This is sufficient reason for the allowability of claims 2 and 9.


Claims 2 and 9 are further allowable on their own merits. Claims 2 and 9 recite the selected symbols on which phase differences are measured are training symbols. Schmidl does not teach this feature of the claim. The training "symbols" identified by the rejection in Schmidl are essentially entire bursts in the nomenclature of the present application and thus are not "training symbols" in the sense required by the claims. This is further reason for the allowability of claims 2 and 9.

Claims 4, 7, 11, and 14 have been rewritten to incorporate the limitations of their parent claims. These claims, and their dependent claims 5 and 12, should now therefore be in condition for allowance.

Conclusion

For the foregoing reasons, Applicant believes all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 446-8694.

Respectfully submitted,



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